What is claimed is:

1. A magnetic shunt assembly for an apparatus, the apparatus including an optical assembly, a gap near the optical assembly, a stage, and a mover assembly that moves the stage in the gap, the mover assembly generating a magnetic field, the magnetic shunt assembly comprising:

a first magnetic shunt positioned approximately between the optical assembly and the mover assembly, the first magnetic shunt being made of a magnetic permeable material, the first magnetic shunt providing a low magnetic reluctance path that redirects at least a portion of the magnetic field away from the gap.

2. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt is spaced apart from the stage.

3. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt is spaced apart from the optical assembly.

4. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt is substantially tubular shaped and substantially encircles at least a portion of the optical assembly.

5. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt is generally flat plate shaped.

6. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt has a substantially "L" shaped cross-section.

7. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt redirects at least approximately 10 percent of the magnetic field away from the gap.

8. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt redirects the at least approximately 50 percent of the magnetic field away from the gap.

9. The magnetic shunt assembly of claim 1 further comprising a second magnetic shunt positioned approximately between the optical assembly and the mover assembly, the second magnetic shunt being made of a magnetically permeable material.

10. The magnetic shunt assembly of claim 9 wherein the first magnetic shunt and the second magnetic shunt are positioned on opposite sides of the stage.

11. The magnetic shunt assembly of claim 9 wherein the first magnetic shunt and the second magnetic shunt are positioned on opposite sides of the optical assembly.

12. The magnetic shunt assembly of claim 1 wherein the first magnetic shunt does not move relative to the optical assembly during operation of the stage assembly.

13. A stage assembly comprising a stage, a mover assembly, a container that encloses the stage and the magnetic shunt assembly of claim 1, wherein the first magnetic shunt is coupled to the container.

14. The stage assembly of claim 13 wherein the magnetic shunt assembly includes at least one container magnetic shunt that is positioned along a wall of the container.

15. An apparatus including the magnetic shunt assembly of claim 1 and an illumination source.

16. An object on which an image has been formed with the apparatus of claim 15.

17. A semiconductor wafer on which an image has been formed with the exposure apparatus of claim 15.

18. A stage assembly for moving a device for an apparatus, the apparatus including an optical assembly, a gap near the optical assembly, the stage assembly comprising:

a stage that retains the device;

a mover assembly that moves the stage in the gap, the mover assembly generating a magnetic field; and

a first magnetic shunt positioned approximately between the optical assembly and the mover assembly, the first magnetic shunt being spaced apart from the stage, the first magnetic shunt being made of a magnetic permeable material, the first magnetic shunt providing a low magnetic reluctance path that redirects at least a portion of the magnetic field away from the gap.

19. The stage assembly of claim 18 wherein the first magnetic shunt is spaced apart from the optical assembly.

20. The stage assembly of claim 18 wherein the first magnetic shunt is substantially tubular shaped and substantially encircles at least a portion of the optical assembly.

21. The stage assembly of claim 18 wherein the first magnetic shunt is generally flat plate shaped.

22. The stage assembly of claim 18 wherein the first magnetic shunt has a substantially "L" shaped cross-section.

23. The stage assembly of claim 18 wherein the first magnetic shunt redirects at least approximately 50 percent of the magnetic field away from the gap.

24. The stage assembly of claim 18 wherein the first magnetic shunt redirects the at least approximately 50 percent of the magnetic field away from the gap.

25. The stage assembly of claim 18 further comprising a second magnetic shunt positioned approximately between the optical assembly and the mover assembly, the second magnetic shunt being made of a magnetically permeable material.

26. The stage assembly of claim 25 wherein the first magnetic shunt and the second magnetic shunt are positioned on opposite sides of the stage.

27. The stage assembly of claim 25 wherein the first magnetic shunt and the second magnetic shunt are positioned on opposite sides of the optical assembly.

28. The stage assembly of claim 18 wherein the first magnetic shunt does not move relative to the optical assembly during operation of the stage assembly.

29. The stage assembly of claim 18 further comprising a container that encloses the stage, wherein the first magnetic shunt is coupled to the container.

30. The stage assembly of claim 18 wherein the magnetic shunt assembly includes at least one container magnetic shunt that is positioned along a wall of the container.

31. An exposure apparatus including the magnetic shunt assembly of claim 18 and an illumination source.

32. An object on which an image has been formed with the exposure apparatus of claim 31.

33. A semiconductor wafer on which an image has been formed with the exposure apparatus of claim 31.

34. A method for reducing stray magnetic fields in a gap of an apparatus, the apparatus including an optical assembly, a stage, and a mover assembly that moves the stage in the gap, the mover assembly generating a magnetic field, the method comprising the step of:

positioning a first magnetic shunt positioned approximately between the optical assembly and the mover assembly, the first magnetic shunt being made of a magnetic permeable material, the first magnetic shunt providing a low magnetic reluctance path that redirects at least a portion of the magnetic field away from the gap.

35. The method of claim 34 wherein the step of positioning the first magnetic shunt includes the step of spacing the first magnetic shunt apart from the stage.

37. The method of claim 34 wherein the step of positioning the first magnetic shunt includes the step of spacing the first magnetic shunt apart from the optical assembly.

38. The method of claim 34 wherein the step of positioning the first magnetic shunt includes the step of providing a first magnetic shunt that is substantially tubular shaped, the first magnetic shunt substantially encircling at least a portion of the optical assembly.

39. The method of claim 34 wherein the step of positioning the first magnetic shunt includes the step of providing a first magnetic shunt that is substantially flat plate shaped.

40. The method of claim 34 wherein the step of positioning the first magnetic shunt includes the step of providing a first magnetic shunt that has a substantially "L" shaped cross-section.

41. The method of claim 34 further comprising the step of positioning a second magnetic shunt approximately between the optical assembly and the mover assembly, the second magnetic shunt being made of a magnetically permeable material.

42. The method of claim 41 wherein the step of positioning the second magnetic shunt includes the step of positioning the second magnetic shunt on the opposite side of the stage from the first magnetic shunt.

43. The method of claim 41 wherein the step of positioning the second magnetic shunt includes the step of positioning the second magnetic shunt on the opposite side of the optical assembly from the first magnetic shunt.

44. A method for making an exposure apparatus that transfers a pattern from a first object onto a second object, the method comprising the steps of:

providing an illumination system that illuminates the first object supported by a stage to form the image on the second object, the first object being positioned in a gap; and

reducing stray magnetic fields in the gap with the method of claim 34.

45. A method for making a device utilizing the exposure apparatus made by the method of claim 44.

46. A method for exposing a semiconductor wafer utilizing the exposure apparatus made by the method of claim 44.

47. A method for making a stage assembly that moves a device for an apparatus, the apparatus including an optical assembly, and a gap near the optical assembly, the method comprising the steps of:

providing a stage that retains the device;

moving the stage in the gap with a mover assembly, the mover assembly generating a magnetic field; and

positioning a first magnetic shunt approximately between the optical assembly and the mover assembly, the first magnetic shunt being spaced apart from the stage, the first magnetic shunt being made of a magnetic permeable material, the first magnetic shunt providing a low magnetic reluctance path that redirects at least a portion of the magnetic field away from the gap.

48. The method of claim 47 wherein the step of positioning the first magnetic shunt includes the step of spacing the first magnetic shunt apart from the optical assembly.

49. The method of claim 47 wherein the step of positioning the first magnetic shunt includes the step of providing a first magnetic shunt that is substantially tubular shaped, the first magnetic shunt substantially encircling at least a portion of the optical assembly.

50. The method of claim 47 wherein the step of positioning the first magnetic shunt includes the step of providing a first magnetic shunt that is substantially flat plate shaped.

51. The method of claim 47 wherein the step of positioning the first magnetic shunt includes the step of providing a first magnetic shunt that has a substantially "L" shaped cross-section.

52. The method of claim 47 further comprising the step of positioning a second magnetic shunt approximately between the optical assembly and the mover assembly, the second magnetic shunt being made of a magnetically permeable material.

53. The method of claim 52 wherein the step of positioning the second magnetic shunt includes the step of positioning the second magnetic shunt on the opposite side of the stage from the first magnetic shunt.

54. The method of claim 52 wherein the step of positioning the second magnetic shunt includes the step of positioning the second magnetic shunt on the opposite side of the optical assembly from the first magnetic shunt.

55. The method of claim 47 further comprising the step of enclosing the stage with a container and the step of securing the first magnetic shunt to the container.

56. A method for making an exposure apparatus that transfers a pattern from a first object onto a second object, the method comprising the steps of:

providing an illumination system that illuminates the device; and

moving the device with a stage assembly made by the method of claim

57. A method for making a device utilizing the exposure apparatus made by the method of claim 56.

58. A method for exposing a semiconductor wafer utilizing the exposure apparatus made by the method of claim 56.